Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in this application.

Listing of Claims:

1. (Currently Amended) A process for making an olefin product from an oxygenate feed, the process comprising the steps of:

a) contacting a metalloaluminophosphate molecular sieve having a porous framework structure with a dimethyl ether composition in a pretreatment zone to form an integrated hydrocarbon co-catalyst within the porous framework; and

b) contacting the metalloaluminophosphate molecular sieve containing the integrated hydrocarbon co-catalyst with an oxygenate in an oxygenate conversion zone to convert the oxygenate to olefin product,

wherein, the pretreatment zone is at a temperature the same as or higher than that of the reaction zone.

2. (Original) The process of claim 1, wherein less than 100% of the oxygenate is converted to olefin product.

3. (Original) The process of claim 2, wherein from 90% to 98% of the oxygenate is converted to olefin product.

4. (Canceled)

5. (Currently Amended) The process of claim [[4]]1, wherein the pretreatment zone is at a temperature higher than that of the reaction zone.

6. (Original) The process of claim 5, wherein the pretreatment zone is at a temperature of at least 10°C higher than that of the reaction zone.

7. (Original) The process of claim 6, wherein the pretreatment zone is at a temperature of at least 20°C higher than that of the reaction zone.

8. (Original) The process of claim 7, wherein the pretreatment zone is at a temperature of at least 50°C higher than that of the reaction zone.

9. (Original) The process of claim 1, wherein the molecular sieve contacting the dimethyl ether composition in a pretreatment zone has a carbon content of not greater than 2 wt %, based on total weight of the molecular sieve prior to contact with the dimethyl ether.

10. (Original) The process of claim 9, wherein the molecular sieve contacting the dimethyl ether composition in a pretreatment zone has a carbon content of not greater than 1.5 wt %, based on total weight of the molecular sieve prior to contact with the dimethyl ether.

11. (Original) The process of claim 10, wherein the molecular sieve contacting the dimethyl ether composition in a pretreatment zone has a carbon content of not greater than 1 wt %, based on total weight of the molecular sieve prior to contact with the dimethyl ether.

12. (Original) The process of claim 11, wherein the molecular sieve contacting the dimethyl ether composition in a pretreatment zone has a carbon content of not greater than 0.5 wt %, based on total weight of the molecular sieve prior to contact with the dimethyl ether.

13. (Currently Amended) The process of claim 1, wherein the molecular sieve containing the integrated hydrocarbon co-catalyst in the oxygenate ~~removal~~ conversion zone has a hydrocarbon content of at least 0.1 wt %, based on total weight of the molecular sieve, prior to contacting the oxygenate.

14. (Currently Amended) The process of claim 13, wherein the molecular sieve containing the integrated hydrocarbon co-catalyst in the oxygenate ~~removal~~ conversion zone has a hydrocarbon content of at least 1 wt %, based on total weight of the molecular sieve, prior to contacting the oxygenate.

15. (Currently Amended) The process of claim 14, wherein the molecular sieve containing the integrated hydrocarbon co-catalyst in the oxygenate ~~removal~~ conversion zone has a hydrocarbon content of at least 5 wt %, based on total weight of the molecular sieve, prior to contacting the oxygenate.

16. (Original) The process of claim 1, wherein the molecular sieve of step a) contacts the dimethyl ether composition in the pretreatment zone at a WHSV that is lower than that at which the molecular sieve of step b) contacts the oxygenate.

17. (Original) The process of claim 1, wherein the molecular sieve of step a) contacts the dimethyl ether composition in the pretreatment zone at a dimethyl ether to molecular sieve weight ratio of from 0.05:1 to 10:1.

18. (Original) The process of claim 1, wherein the metallaluminophosphate molecular sieve is selected from the group consisting of SAPO-5, SAPO-8, SAPO-11, SAPO-16, SAPO-17, SAPO-18, SAPO-20, SAPO-31, SAPO-34, SAPO-35, SAPO-36, SAPO-37, SAPO-40, SAPO-41, SAPO-42, SAPO-44, SAPO-47, SAPO-56, AlPO-5, AlPO-11, AlPO-18, AlPO-31, AlPO-34, AlPO-36, AlPO-37, AlPO-46, metal containing molecular sieves thereof, and combinations thereof.

19. (Original) The process of claim 1, wherein the dimethyl ether composition contacting the molecular sieve in the pretreatment zone comprises from 0.05 wt % to 70 wt % dimethyl ether, and 10 wt % to about 80 wt % propane, based on total weight of the dimethyl ether stream.

20. (Original) The process of claim 1, wherein the dimethyl ether composition comprises from 0.05 wt % to 70 wt % dimethyl ether, and not greater than 20 wt % 1-butene, based on total weight of the dimethyl ether stream.

21. (Original) The process of claim 1, wherein the contact of the molecular sieve of step b) with the oxygenate in the oxygenate conversion zone converts at least 90 wt % of the oxygenate to olefin product.

22. (Original) The process of claim 1, wherein at least one olefin in the olefin product is contacted with a polyolefin forming catalyst to form polyolefin.

23. (Original) A process for making an olefin product from an oxygenate feed, the process comprising the steps of:

a) contacting a silicoaluminophosphate molecular sieve having a porous framework structure with the dimethyl ether stream in a pretreatment zone to form an integrated hydrocarbon co-catalyst within the porous framework; and

b) contacting the silicoaluminophosphate molecular sieve containing the integrated hydrocarbon co-catalyst with an oxygenate in an oxygenate conversion zone to convert the oxygenate to olefin product,

wherein the dimethyl ether stream that contacts the silicoaluminophosphate molecular sieve is obtained by separating dimethyl ether from the olefin product.

24. (Original) The process of claim 23, wherein the molecular sieve of step a) contacts the dimethyl ether steam at an dimethyl ether to molecular sieve weight ratio of from 0.05:1 to 10:1.

25. (Original) The process of claim 23, wherein less than 100% of the oxygenate is converted to olefin product.

26. (Original) The process of claim 25, wherein from 90% to 98% of the oxygenate is converted to olefin product.

27. (Original) The process of claim 23, wherein the pretreatment zone is at a temperature the same as or higher than that of the reaction zone.

28. (Original) The process of claim 27, wherein the pretreatment zone is at a temperature higher than that of the reaction zone.

29. (Original) The process of claim 23, wherein the molecular sieve contacting the dimethyl ether stream has a carbon content of not greater than 2 wt %, based on total weight of the molecular sieve prior to contact with the dimethyl ether.

30. (Original) The process of claim 23, wherein the molecular sieve containing the integrated hydrocarbon co-catalyst has a hydrocarbon content of at least 0.1 wt %, based on total weight of the molecular sieve, prior to contacting the oxygenate.

31. (Original) The process of claim 23, wherein the molecular sieve of step a) contacts the dimethyl ether stream at a WHSV that is lower than that at which the molecular sieve of step b) contacts the oxygenate.

32. (Original) The process of claim 23, wherein the dimethyl ether stream contacting the molecular sieve in the pretreatment zone comprises from 0.05 wt % to 70 wt % dimethyl ether, and 10 wt % to about 80 wt % propane, based on total weight of the dimethyl ether stream.

33. (Original) The process of claim 23, wherein the dimethyl ether stream comprises from 0.05 wt % to 70 wt % dimethyl ether, and not greater than 20 wt % 1-butene, based on total weight of the dimethyl ether stream.

34. (Original) The process of claim 23, wherein at least one olefin in the olefin product is contacted with a polyolefin forming catalyst to form polyolefin.

35. (Original) A process for making an olefin product from oxygenate, the process comprising the steps of:

a) separating a stream containing dimethyl ether from an olefin stream;

b) contacting a metalloaluminophosphate molecular sieve having a porous framework structure with the separated dimethyl ether stream in a pretreatment zone to form an integrated hydrocarbon co-catalyst within the porous framework; and

c) contacting the metalloaluminophosphate molecular sieve containing the integrated hydrocarbon co-catalyst with oxygenate in an oxygenate conversion zone to convert the oxygenate to olefin product.

36. (Original) The process of claim 35, wherein the dimethyl ether stream contacting the molecular sieve in the pretreatment zone comprises from 0.05 wt % to 70 wt % dimethyl ether, and 10 wt % to about 80 wt % propane, based on total weight of the dimethyl ether stream.

37. (Original) The process of claim 35, wherein the dimethyl ether stream comprises from 0.05 wt % to 70 wt % dimethyl ether, and not greater than 20 wt % 1-butene, based on total weight of the dimethyl ether stream.

38. (Original) The process of claim 35, wherein the molecular sieve contacting the dimethyl ether composition in a pretreatment zone has a carbon content of not greater than 2 wt %, based on total weight of the molecular sieve prior to contact with the dimethyl ether.

39. (Original) The process of claim 35, wherein the molecular sieve containing the integrated hydrocarbon co-catalyst has a hydrocarbon content of at least 0.1 wt %, based on total weight of the molecular sieve, prior to contacting the oxygenate.

40. (Original) The process of claim 35, wherein less than 100 wt % of the oxygenate is converted to olefin product.

41. (Original) The process of claim 35, wherein at least one olefin in the olefin product is contacted with a polyolefin forming catalyst to form polyolefin.

42. (Currently Amended) A process for making polyolefin from an oxygenate feed, the process comprising the steps of:

a) contacting a metalloaluminophosphate molecular sieve having a porous framework structure with a dimethyl ether composition in a pretreatment zone to form an integrated hydrocarbon co-catalyst within the porous framework;

b) contacting the metalloaluminophosphate molecular sieve containing the integrated hydrocarbon co-catalyst with an oxygenate to convert the oxygenate to olefin product; and

c) contacting at least one olefin in the olefin product with a polyolefin forming catalyst to form polyolefin,

wherein, the pretreatment zone is at a temperature the same as or higher than that of the reaction zone.

43. (Original) The process of claim 42, wherein the dimethyl ether composition comprises from 0.05 wt % to 70 wt % dimethyl ether, and 10 wt % to about 80 wt % propane, based on total weight of the dimethyl ether composition.

44. (Original) The process of claim 42, wherein the dimethyl ether composition comprises from 0.05 wt % to 70 wt % dimethyl ether, and not greater than 20 wt % 1-butene, based on total weight of the dimethyl ether stream.

45. (Original) The process of claim 42, wherein the molecular sieve contacting the dimethyl ether composition has a carbon content of not greater than 2 wt %, based on total weight of the molecular sieve prior to contact with the dimethyl ether.

46. (Original) The process of claim 42, wherein the molecular sieve containing the integrated hydrocarbon co-catalyst has a hydrocarbon content of at least 0.1 wt %, based on total weight of the molecular sieve, prior to contacting the oxygenate.

47. (Original) The process of claim 42, wherein less than 100 wt % of the oxygenate is converted to olefin product.